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Space Station Sinking As NASA Budget Declines

The mega-project legacies of the Reagan years continue to wilt away as money and political vitality drain out of the Space Station.

The misbegotten space project is now on the same course that killed the Superconducting Super Collider and recast the Strategic Defense Initiative with severely reduced goals and spending plans. Unless the White House and Congress collaborate on a miraculous rescue, the Space Station will either die in this Congress or be consigned to a starvation budget that amounts to the same fate.

At this point, space romance has gone out of the project and the rationale for Congressional support rests on the Space Station as a source of jobs in a sickly aerospace economy—some 40,000 of them, directly and indirectly, proponents claim. For a time, the SSC got along on the jobs pitch—though only 7000 were claimed—but eventually not even the jobs argument could save the project from legislators determined to demonstrate frugality.

The tipoff to the Station's terminal plight is in a quasi-

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requiem from one of its most durable supporters, Rep. George Brown (D-Calif.), Chairman of the House Science, Space, and Technology Committee. A space booster from far back, Brown has frequently lamented the cannibalizing of the space program to meet giant reductions in NASA's long-term spending plans—from the \$96 billion over five years projected in 1992 down to \$78 billion projected for that same period last year, with the budget minders working on further reductions.

Brown now warns that unless the budget trends are reversed—doubtful, given the mood of Congress and the White House—something has to give to keep NASA healthy. If need be, Brown reluctantly suggests, the Space Station will have to go.

The budget proposed by Clinton for all of NASA next year, \$14.3 billion, is \$227 million below this year's appropriation. The Space Station, which had been shrunk several times to suit declining budgets, received \$1.937 billion this year, and is listed for \$48 million less than that in the President's new budget.

The diminution of the Space Station has even extended to a change of name, from the Cold War-inspired Space Station *Freedom*, as Ronald Reagan called it when he announced the

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Republican Backers of NIH Enraged by Hillary's Speech

Hillary Rodham Clinton has been rebuked by House Republicans for casting them as the villains in the financial struggles of the National Institutes of Health, an agency that has not fared well in the President's priorities.

Given the many other shots recently fired at the First Lady, she probably hasn't noticed this one. But with NIH barely recuperated from the abortion-related strife of the Reagan-Bush era, the introduction of a new political theme—supportive Republicans depicted as biomedical heavies—should not be welcomed by the friends of Bethesda.

Mrs. Clinton didn't name any malefactors or utter the name of the other political party. But a grasp of her message does not require a PhD in political science.

The Republicans' ire was aroused by the strongly parti-

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In Brief

The President's Committee of Advisors on Science and Technology is approaching birth, but slowly, in the Clinton style. Plans for the Committee—PCAST, for short—were announced last November. Selection of candidates has been completed by the White House Office of Science and Technology Policy, and 17 of them have been accepted by Clinton. However, as Presidential appointees, all must go through background checks before they're officially on board. Opening date? Who knows? says a White House source.

"You cannot imagine the number of people in the Beltway Bandit group who are technology-transfer specialists. It has become a way of making a living," Mary L. Good, Under Secretary of Commerce for Technology, remarked March 3 in a talk to the Commission on Professionals in Science and Technology on "Technology Transfer from Government to Industry." She added, "That's not what it's all about."

A \$1 million prize for development of "rapid, reliable and inexpensive" diagnostic tests for chlamydia and gonorrhea infections has been announced by the Rockefeller Foundation. Contestants must submit 800 samples of their entries, plus \$5000 "to help defray part of the laboratory costs incurred in verifying the properties of device." For applicants from "lower income or middle income" countries, the fee may be waived.

Another contest, this one by the Department of Energy, in quest of ideas for using the site and assorted remains of the Superconducting Super Collider. Besides big holes in the Texas earth, there's a 500,000-square-foot building, and other assets. No prize mentioned in this contest.

... First Lady's Budget Story Refuted by the Numbers

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san speech the First Lady delivered on February 17 at NIH—traditionally a demilitarized zone in which political visitors limit themselves to ceremonial fluff and praise of their beaming hosts. Mrs. Clinton, however, used the occasion to depict a link between biomedical research and health-care reform, suggesting that opponents of the Administration's health proposals don't care for research either [SGR, March 1: "Mrs. Clinton Assures NIH of Basic-Research Support"].

"For much of the past decade," she said, "biomedical research has been neglected and underfunded and even unappreciated, and the President plans to fix that. He intends to fix it by reaffirming our nation's commitment to basic biomedical research and training and by firmly fixing our health-care system overall."

Referring to "many interests arrayed against the changes" sought by the Administration, she said, "We are facing challenges from those who do not believe in research or do not believe in the government's role in research."

The reality, of course, is that husband Bill and his budget planners were none too generous last year in their first crack at the NIH budget, proposing an increase of some \$342 million on a base of \$10.3 billion.

Indeed, it was an increase, and in a difficult budget time. But because the Clinton budget called for raising NIH spending on AIDS and breast cancer research, the net effect would have been slight budget reductions throughout most of NIH. Since absence of substantial growth is equated with catastrophe in the biomedical community, the Clinton "increase" was denounced by the biomedical-research lobby as a mere token.

Some relief, however, was provided by Congress. Carrying on its customary bipartisan support for biomedical research, Congress added nearly \$300 million to the \$342 million increase requested by Clinton, thus bringing the total NIH budget to nearly \$11 billion. For the coming fiscal year, Clinton requested a \$517 million increase—small, in the view of the biomedical strategists, but no doubt calibrated in expectation of the usual Congressional favor for NIH.

The Hillary version of NIH and Bill Clinton understandably rankled the four Republicans who constitute the minority membership on the House Appropriations Subcommittee for NIH: Reps. John Edward Porter (Illinois), C.W. Bill Young (Florida), Henry Bonilla (Texas), and Helen Delich Bentley (Maryland).

Their four votes don't count for much, since the Subcommittee is loaded with nine Democrats. But inter-party congeniality has customarily prevailed on the NIH Subcommittee, which is the most influential decision point on Congress's serpentine route to financing the health sciences. Bipartisan combat proceeds without interruption all across Capitol Hill, but biomedical research has taken on the mantle of a legislative holy trust unworthy of inter-party bickering.

The managers of NIH deftly play both sides of the aisle.

The Bethesda campus is strewn with buildings named—not after great scientists—but departed Chairmen of NIH's House and Senate Appropriations Subcommittees—Fogarty, Magnuson, and Hill; nearing completion is the William Natcher Building, named after the Kentucky Congressman (now seriously ailing) who has presided over NIH's money since 1979.

The aforementioned are all Democrats, but in lapidary matters, NIH is an equal-opportunity memorialist. Last year, the newest lab building on campus was named after the late Silvio O. Conte, of Massachusetts, for many years the senior Republican on the House Subcommittee. Conte was the legislative architect of the Decade of the Brain, a fizzled attempt to loosen up neurological funding *a la* the War on Cancer.

The protest of the four Republicans came in a February 22 letter to Mrs. Clinton that, as much as seems possible in politics, appeared genuinely based on feelings of innocent hurt. Expressing "extreme dismay" about her NIH speech, the Republicans asserted that "we led the successful effort last year, along with other members of the House and Senate Appropriations Committees, to reject the President's proposed cuts in NIH funding for 1994 [original italics].... We are disturbed by your statement that, 'for much of the past decade, biomedical research has been neglected and underfunded and even unappreciated.'"

"We agree that the federal government ought to increase its support for this important enterprise. However, by comparison with previous budget requests, President Clinton's requests to Congress for NIH funding are quite low and indicate, in our opinion, a lack of vision for the future of medical research."

The Republicans delved into the budget numbers, noting that for fiscal years 1990-93, President Bush proposed average annual increases of 5.25 percent for NIH, and Congress responded with increases averaging 6.9 percent.

"By contrast," the letter continued, "for 1994, President Clinton requested only a 2 percent increase for NIH overall. Most disconcertingly, the President asked to cut funding for

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With Gallo Exoneration Looming, Dingell Asked to Act

With federal prosecutors shunning the case and advising the scientific establishment to keep its own house in order, Robert C. Gallo may finally be legally clear of the misconduct allegations that have dogged him for nearly a decade.

That outcome, however, is viewed with distaste by many in the scientific community who have followed the career of the renowned AIDS researcher at the National Cancer Institute. Some of them are trying to prod Congressman John Dingell into taking on the case as an example of scientific tolerance of misconduct—once a favorite Dingell theme.

But Dingell, Chairman of the Energy and Commerce Oversight and Investigations Subcommittee, has been wary of the scientific tribes since he drew a realm of hostile editorials from clashes with Nobelist David Baltimore and other scientific celebrities several years ago.

A few members of his staff labor on with studies and interviews concerning delinquency in science. But the Congressman keeps his distance, amid reports that senior advisors on his goliath staff tell him there's no political profit in scrapping with scientists—especially those who complain of being diverted from finding a cure for AIDS.

A minutely detailed report on the Gallo case been written by Suzanne Hadley, a former NIH misconduct investigator assigned to Dingell's staff. But whether, when, or in what form it will be published have not been decided.

Meanwhile, 91-year-old John T. Edsall, an icon of scientific probity, has expressed his concern about the Gallo case in a letter to Dingell dated February 4. Edsall, Professor Emeritus of Biochemistry at Harvard, wrote: "It does seem clear that the virus on which Dr. Gallo worked, which has served as the basis for development of the HIV antibody blood

test, was in fact discovered at the *Institut Pasteur*.

"However, it was the US government that was awarded the patent on the blood test, and later our government obtained other patents also. Yet grave questions remain, concerning the allocation of the patents and what appears, to a great many scientists and others, as a violation of the rights of the French investigators and the French government."

Noting that the Office of Research Integrity declined to defend its finding of scientific misconduct against Gallo in an appeals hearing on the grounds that it couldn't satisfy evidentiary requirements, Edsall asserted: "I believe that the standards of ethical conduct for scientists are, and should be, more demanding than the purely legal ones."

Edsall concluded his letter to Dingell by observing that "the attempt to clear Dr. Gallo of all legal charges against him is on the verge of complete success. If you have strong evidence that could lead to a different conclusion, would not this be the time to make it public, in the interest of truth and honesty, and perhaps also of appropriate legal action?"

Job Changes & Appointments

Graham R. Mitchell, Director of Planning and Forecasting, GTE Corporation, was confirmed March 2 as Assistant Secretary of Commerce for Technology Policy.

Klaus Schroeter, Counselor for Science and Technology at the German Embassy in Washington since 1990, has been appointed Director of Environmental Technology at the Federal Ministry for Research and Technology, in Bonn. His successor in Washington is **Wolfram Schoett**, the previous occupant of the environmental post.

Mrs. Clinton at NIH

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10 of the 17 Institutes. We find it extremely ironic that you would now suggest that the President is attempting to remedy past underfunding of the NIH."

Turning to Clinton's request for the coming fiscal year, FY 1995, the Republicans tallied it at a skimpy 3.8 percent, whereas Clinton calls it a 4.7 percent increase. The difference apparently arises from Clinton's proposal for "forward funding" of \$100 million—i.e., money budgeted for this year that will be held for spending next year.

"In recent meetings with our staffs," the letter went on, "the Department of Health and Human Services could identify no programmatic justification for this budget gimmickry." It then noted that the Administration's earmarking of funds for breast cancer and AIDS research undermines the role of scientific judgment in allocating funds, "creates dramatic distortions in resource allocation, pits one patient group against another, and results in disturbing reductions in promising areas of research."

Obviously well tuned in to the biomedical-research grape-

vine, the four Republicans stated: "We find your comments regarding health care reform particularly unconvincing given that the NIH was generally excluded from the President's Health Care Reform Task Force."

Commending research as a means of restraining health-care costs, the letter noted: "During the hearings on the 1994 budget, all of the Directors of the Institutes were asked whether they or anyone from their Institute had been included in the Task Force deliberations." Most had not, the Republicans pointed out, adding, "We believe that biomedical research has been largely ignored in the President's health care reform proposals and encourage you to provide leadership that will result in an enhanced federal commitment to basic biomedical research."

They concluded by asking Mrs. Clinton to collaborate with them "to improve the President's request for a 3.8 percent increase for the NIH in 1995, and to eliminate the administrative earmarks and budget gimmicks from 1995 appropriations."

The Republican letter writers make a sound case and have good reason to be incensed by Mrs. Clinton's misleading, bare-knuckles performance at NIH.—DSG

... NASA Facing Further Budget Cuts, Brown Warns

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project in 1984, to the non-ideological, post-Cold War Clinton version, Space Station *Alpha*.

As the NASA budget has plummeted, so has Congressman Brown's mood, revealed at a low point on March 2, when he told the Goddard Memorial Space Symposium that maintenance of a balanced space program "might require the elimination of funding for the Space Station." Brown then guided his audience through a budget tour that demonstrated that the beleaguered NASA can't pay for it all under current long-term planning.

Under the ironclad 5-year budget treaty that Congress and the White House agreed to last year, Brown pointed out, NASA faces even further budget reductions. As a result, he continued, "by 1999, the budget for the traditional space sciences will decline to the level we had in 1983.... Although the Mission to Planet Earth program is still in the budget, the entire program after the first launch has been underfunded and will slip. The irony," he observed, "is that the parts of the program that will be most affected are precisely those which will help us answer the important climate policy questions such as global warming."

Proceeding with his dour survey, Brown described NASA's programs as having "no cushion," adding: "For years, the Appropriations Committee has used the NASA budget as a 'cash cow' for other appropriations accounts"—a reference to the Departments of Veterans Affairs and Housing and Urban Development, which share the same appropriations pot with NASA. "There is no signal that this will change in the current round of appropriations," he said, "and such actions will necessitate major restructuring for the NASA programs."

Brown then indulged in hopefulness, saying he believes that Clinton and company "can exercise leadership in making sure that the appropriations allocations permit NASA to receive its requested funding this year." But then he reverted to realistic gloom, stating: "If NASA receives a major reduction in the appropriations process this year, or if the out years for NASA cannot be reconfigured, I have arrived at the regretful decision that I must oppose the Space Station."

The primary curse of the Space Station is its prominence in the long-term budget tables, with projected expenditures for construction and operations calculated last year by the General Accounting Office at \$121 billion through the year 2027. Per year, that's not much in the context of an annual federal budget now in the neighborhood of \$1.5 trillion. But with the White House and Congress scratching for funds for various pet projects under the zero-sum budget system now in effect, the multi-billion-dollar items naturally inspire envious calculations.

They would do so even if they were models of frugal management. However, from the time of their birth in the Reagan Administration, the costs and timetables of the mega-projects were misrepresented to compliant Congresses.

It was only after spending got out of control and the unkept promises kept mounting, that Congress cut back the Strategic Defense Initiative Organization, since renamed the Ballistic Missile Defense Organization, and killed the Superconducting Super Collider.

Scaled back to what now amounts to little more than an unfurnished orbiting motel, the Space Station not only suffers from lack of capacity to do anything useful in its initial configuration. It is also now burdened by a partnership with NASA's new Russian friends, who are to receive \$400 million over the next four years for collaborating on the US Space Station.

As part of the bilateral agreement, the Russians are to employ their *Mir* space station in the project and contribute five launchers for hauling construction materials for *Alpha*. Reluctantly prodded into this deal by the White House's eagerness to prop up the Russians at low cost, NASA initially said the collaboration would produce savings of \$4 billion and two years for the US. Lately, these favorable numbers have been somewhat reduced. On the basis of NASA's previous performances in fiscal forecasting, the "savings" are quite likely hallucinatory. The Russians also agreed to abide by the Missile Technology Control Regime (MTCR), designed to keep long-range rocketry out of dangerous hands. But, given the instability in Russia, doubts have grown about the wisdom of getting the US space project at all dependent on this foreign collaboration.

The issues are examined in a recent paper by Marcia S. Smith, Specialist in Aerospace Policy at the Science Policy Research Division of the Congressional Research Service.

"NASA has accepted the Clinton Administration's approach," the paper states, "in the hope of winning more support for a program that has encountered increasing Congressional opposition each year. From a space perspective, the question is whether loading weighty foreign policy issues such as the future of Russia onto the shoulders of the already troubled Space Station is likely to result in a Space Station being in orbit at the end of the century."

Questioning whether the collaboration will actually assist the Space Station, Smith continues: "If Russia ends its involvement, or if the United States changes its mind because of new political circumstances, NASA would face the prospect of coming to Congress with yet another redesign.... If the Space Station were beginning today, merging the talents of US and Russian space experts might make sense...."

"The reality today, however," the paper observes, "is that NASA has already invested nine years and \$11.2 billion in the Space Station program and patience is wearing thin. The Space Station is in a vulnerable position, yet the Clinton Administration has chosen to add more risk by marrying it to the weighty political issue of the future of Russia."

"If the primary US goal is to support Russia and stop ballistic missile proliferation, then merging with the Rus-

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Pentagon's Medical School in New Fight for Survival

The two most durable institutions on the American landscape are military bases and medical schools, neither of which succumbs to economy moves without first staging a Stalingrad defense.

Roll the pair into one, and the result is the Uniformed Services University of the Health Sciences (USUHS), the Pentagon's own medical school, in Bethesda, Md. USUHS was born in politics, sustained by politics, and now, in the biggest fight of its life, its survival depends on politics. Like so much else in Vice President Gore's plans for "reinventing government," *Creating a Government That Works Better & Costs Less*, USUHS has been fingered for abolition, unless Congress intervenes. Elimination of the school would save \$300 million over five years, by the Administration's count, hotly disputed by USUHS and its friends.

With the armed forces shrinking, and 125 civilian medical schools producing an abundance of physicians, the reinventers insist that military needs can be met through the Health Professionals Scholarship Program, at \$111,000 per doctor, plus volunteer enlistments, rather than the \$562,000 per doctor calculated for USUHS by the cost savers. Gore's report notes that USUHS provides only 10 percent of the military's doctors. Old stuff for the defenders of USUHS.

USUHS was a legislative obsession of the late Rep. F. Edward Hebert, of Louisiana. Through the 1960s, his proposal for a special medical school for the military services was dismissed by the Pentagon as just another foolish Congressional plan for spending its money. But eventually, the seniority system put Hebert in the Chairmanship of the Armed Services Committee—and the Department agreed that it certainly could use that school.

Congress passed the enabling legislation in 1972, and after a slow startup, the school was ready to roll when Jimmy Carter's Secretary of Defense, Harold Brown, tried to kill it off as unneeded. Interpreting this as a slur against one of its own, Congress indignantly responded by decreeing survival of the school and naming it after the departed Hebert.

The latest effort at termination, perhaps the most serious

ever, was the subject of a hearing March 2 before the Senate Armed Services Subcommittee on Force Requirements and Personnel. Testifying in behalf of USUHS were Senators Paul Sarbanes (D-Md.) and Strom Thurmond, of South Carolina, the Ranking Republican on the Committee. Both scoffed at the thought of closing the school, with Thurmond declaring that "the decision to close or maintain this national resource must not be left to budgeteers." Sarbanes described the closure plan as "a proposal in search of a rationale."

Several witnesses contested the cost-saving arithmetic, including Everett Alvarez Jr., Chairman of USUHS's Board of Regents, who said that the great majority of its graduates remain in military service, in contrast to scholarship physicians, thus avoiding turnover costs.

Arthur Smith, Professor of Surgery at the Medical College of Georgia, told grisly tales of battlefield medicine, for which physicians trained in civilian schools, he suggested, are poorly prepared. Wounded troops, he said, often lie "in a muddy field heavily contaminated with human and animal waste" before receiving treatment. Unlike civilian schools, he said, USUHS prepares its graduates for these difficult circumstances and other special military needs.

As in the past, the outcome of USUHS's latest trauma will swing on politics. The Clinton Administration needs all the votes it can possibly muster for health-care and welfare reform. The public doesn't care about USUHS, few being aware of its existence, but Maryland's Senators and several members of the House are dug in to protect the prize.

The close-out plan, described by William J. Lynn, Director for Program Analysis and Evaluation in the Office of the Secretary of Defense, calls for graduating those on board, but taking in no more students. Lynn said, however, that Defense Secretary Perry had authorized admission of a freshman class next fall if there's no decision on closure by April.

The testimony was heard by Subcommittee Chairman Richard Shelby (D-Ala.) and the ranking Republican, Dan Coats, of Indiana. Neither seemed familiar with USUHS, and their questioning was evenhanded.

Space Station *(Continued from Page 4)*

sians has merit, because whether the Space Station is actually built is not that important. If the primary US goal is to build a Space Station, however, then what is needed most is stability, a future that does not seem likely in the context of US-Russian foreign policy."

Addressing Congressional attitudes, the analysis states, "The White House apparently hopes that some Members who might otherwise vote against the Space Station will vote for it because of the Russian connection. However, it could lose votes from those who saw the Space Station as a symbol of American preeminence in space." Noting the emphasis on aerospace employment in previous House and Senate debates on the Space Station, Smith points out that the domestic job

impact of US-Russian collaboration is a matter of Congressional concern. She concludes, "Ultimately, the space station's impact on jobs and the deficit may sway more votes than its new foreign policy identity."

Still another factor may be one that stands out in Rep. Brown's concerns about the tightly stretched NASA budget—that given the financial circumstances, the demise of the Space Station would be therapeutic for NASA's other programs. "We must think carefully in light of the new budget reality," Brown said in his Goddard address, "about whether the long-term, overall health of the program is best served by holding onto all existing programs or whether a stronger, more balanced program is not created by eliminating one of its most costly elements—the Space Station."—DSG

Study on Future of DOE's Labs Gets Under Way

The committee that's supposed to play a big role in charting the future of the Department of Energy's major laboratories held its first meeting March 2 and received briefings from DOE officials, but gave no clue about how it plans to proceed or when it would meet again.

Titled the Task Force on Alternative Futures for the DOE National Laboratories, the 19-member group, announced by DOE Secretary Hazel O'Leary on February 2, met at the Argonne National Laboratory, near Chicago. Under its charter, it is to focus on the nine multi-purpose laboratories that account for most of DOE's \$6 billion research budget and 19,000 scientists and engineers. A report is due next February.

The emphasis in the charter is on the three DOE weapons labs that serve the Pentagon: Los Alamos, Livermore, and Sandia. They're the ones that critics usually have in mind when they charge DOE with sustaining costly relics of the Cold War.

The other labs under the Task Force's purview are: Argonne, Brookhaven, Idaho National Engineering, Oak Ridge, Pacific Northwest, and the National Renewable Energy Lab—all with purely civilian agendas. In addition, the Task Force may examine DOE's so-called single-purpose laboratories.

The weapons labs and their political backers are most desperate to find a rebirth in non-military roles, which already account for a good portion of their programs. But the other labs are also under pressure to develop close ties with industry and promote commercialization of their research. The most common complaint about the lot of them is that over decades they have calcified into sheltered, clunky bureaucracies that are unfit for the rigors of the profit-seeking marketplace.

The charter directs the Task Force to study the labs and "propose specific alternatives for redirecting the scientific and engineering resources ... toward the economic, environmental, defense, scientific, and energy needs of the nation." The options cited include "possible redirection, restructuring, and/or closure of the DOE laboratory system."

The inaugural meeting of the Task Force was addressed by Charles Curtis, Under Secretary of Energy; Susan Tierney, Assistant Secretary for Policy, Planning and Program Evaluation; Martha Krebs, Director of Energy Research; Victor Reis, Assistant Secretary for Defense Programs; Peter Didisheim, Special Assistant to the Secretary for Science and Technology; Charles Shank, Director of the Lawrence Berkeley Lab, and Al Narath, Director of Sandia. The Task Force members are:

Robert Galvin (Chairman), Chairman Executive Committee, Motorola
 Braden Allenby, Research VP, AT&T
 Linda Capuano, Vice President, Conductus, Inc., Sunnyvale, CA
 Ruth Davis, CEO, Pymatuning Group, Alexandria, VA
 Marye Anne Fox, Department of Chemistry, U. of Texas, Austin
 Ben Huberman, President, Huberman Consulting, Washington, DC
 Shirley Jackson, Dept. of Physics and Astronomy, Rutgers University

A Lab-Closing Commission?

From a briefing paper by Noel W. Hinners, Chief Scientist, Business Development and Advanced Programs, Martin Marietta Astronautics, prepared for the Forum on Science in the National Interest, Jan. 31-Feb. 1 at the National Academy of Sciences [SGR, Feb. 15: "Big Pow-Wow Ponders Shifts in Research Policy"].

[J]ust as our educational institutions seem to have incredible inertia in their ability to respond to changing times, so do the national labs. Rather than respond to market forces as does industry (significant down-sizing, restructuring, consolidation or closure), their tendency is self-preservation. Increasingly, some national labs are becoming direct competitors with industry by taking contract work in-house, with claims that it can be done cheaper, and by taking ideas from industry to implement in-house.

On the surface, the cost claim may appear true. The real costs of doing business in a national lab, or the reasons for a differential with industry, are frequently obscure....

In any decision process looking at overall national needs for a proper mix of national labs, universities and industry, one must insist on truth-in-costing and an examination of ways to reduce the non-value added burden on industry and academia of complying with government regulations....

National lab right-sizing is the toughest problem to attack because of the institutional and political protection, an issue addressed recently by Morgan and White (*Issues in Science and Technology*, Winter 1993-1994) in their call for a major restructuring of the national lab system. In their conclusion, Morgan and White essentially give up hope for major restructuring, believing that political and institutional pressures will prevail. One should not give up so easily. Congress, recognizing the pressures, found a way to deal with a similar defense issue by forming the Base Closing Commission: major bases are being closed, restructured and down-sized. Painful though the process is, no institution should be exempt.

Lynn Jelinski, Director of Biotechnology Program, Cornell University
 Henry Kendall, Professor of Physics, MIT
 Richard Lester, Director, MIT Industrial Performance Center
 Roger Little, CEO, Spire Corp., Bedford, MA
 James McCarthy, Prof. of National Security Studies, Air Force Academy
 Mark Murphy, President, Strata Production Co., Roswell, NM
 Richard Nelson, Professor of Economics, Columbia University
 Edward Roberts, Faculty Chair, MIT Management of Technology
 Ben Rosen, Chairman of the Board, Compaq Computer
 Harvey Sapolsky, Director, Arms Control Studies Program, MIT
 William Spencer, CEO, SEMATECH, Austin, Texas
 Victoria Tschinkel, Sr. Consultant, Landers & Parsons, Tallahassee, FL

In Print

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Federal Funding for AIDS Research and Prevention: FY 81-FY 94 (93-340 SPR; 24 pp., no charge), from the Science Policy Research Division of the Congressional Research Service, part of the Library of Congress, a budgeting update that carries federal AIDS funding from \$200,000 in FY 1981, when the disease was first reported by the Centers for Disease Control, to FY 1994, when federal research and prevention funds totaled \$2.5 billion. The report, by Judith A. Johnson, places AIDS spending at NIH this year at \$1.3 billion, and total federal expenditures—for AIDS research, treatment, social services, and education—at \$6.1 billion. Included is a year-by-year summary of the budget jousting on AIDS between the White House and Congress.

Also from the Congressional Research Service: **DOD's Independent Research and Development Program: Changes and Issues** (93-1-51 SPR; 34 pp., no charge), surveys the effects of recently reduced paperwork requirements and lessened oversight in the Pentagon's perennially controversial IR&D program, which provides funds for DOD contractors to conduct independent inhouse research. Fairly big money is involved, the report states, noting DOD estimates of IR&D payments totaling \$17.2 billion between FY 1985-92. The report points out, however, that the efficacy of IR&D spending, always a matter of debate, is even more difficult to evaluate under the new rules. The report is by Michael E. Davey and Dahlia Stein.

Copies available through the offices of Congressmen and Senators, who are usually eager to oblige a constituent. Specify the Congressional Research Service, publication number, and title. Senate switchboard: 202/224-3121; House: 202/225-3121.

Industry, Technology, and the Environment: Competitive Challenges and Business Opportunities (GPO Stock No. 052-003-01362-2; 340 pp., \$19; add 25 percent for international orders), from the Congressional Office of Technology Assessment (OTA), says stricter environmental standards are becoming a major priority for business and industry in the US and abroad, on a par with product quality and competitive pricing, and sees growing economic opportunities in technologies and services that meet environmental requirements.

The report notes, however, that federal and private spending for R&D applicable to commercial environmental purposes is relatively modest—with most of the \$650 million in federal money in this category last year devoted to research on hazardous waste on government properties. OTA also says government programs are scattered and poorly linked to industry. Roland Schmitt, former President of Rensselaer Polytechnic Institute, chaired the advisory panel for the study, and Wendell Fletcher of the OTA staff served as Project Director. (A 38-page summary is available without charge from: Office of Technology Assessment, Publications, Washington, DC 20510-8025; tel. 202/224-8996.)

The report was preceded by two related OTA publica-

tions: **Trade and Environment: Conflicts and Opportunities** (GPO Stock No. 052-003-01282-1; 120 pp., \$5.50) and **Development Assistance, Export Promotion, and Environmental Technology** (GPO Stock No. 052-003-01332-1; 108 pp., \$4.75).

Also from OTA: **Biological Components of Substance Abuse and Addiction** (GPO Stock No. 052-003-01350-9; 61 pp., \$4.25), a "background paper" for an ongoing OTA assessment, "Technologies for Understanding the Root Causes of Substance Abuse and Addiction." The paper discusses drug actions, dependence, genetic factors, etc., with emphasis on the complexities of drug abuse and the many gaps in understanding.

The OTA study was requested by several Congressional committees, including the Senate Committee on Labor and Human Resources, chaired by Edward Kennedy, who commented that the report "lays the foundation for approaching drug abuse and addiction as public health problems, amenable to study and treatment." Patricia Evans, of the Bayview-Hunter's Point Foundation, San Francisco, chaired the advisory panel for the report; Kevin W. O'Connor was Project Director.

Order from: New Orders, Superintendent of Documents, PO Box 371954, Pittsburgh, Pa. 15250-7954; tel. 202/783-3238; fax 202/512-2250.

Ballistic Missile Defense Organization Technology Applications Report (82 pp., no charge), from the successor to the Strategic Defense Initiative, descriptions of commercial spinoffs from its anti-missile research, accompanied by a sales pitch for the basic program.

Order from: BMDO Technology Applications Office, c/o National Technology Transfer Center, Washington Operations, 2121 Eisenhower Ave., Suite 400, Alexandria, Va. 22314; tel. 703/518-8800, ext. 500; fax 703/518-8986.

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In Print

Official reports and other publications of special interest to the research community

(Copies of publications listed here are available from the indicated sources—not from SGR)

Selected Data on Academic Science and Engineering Expenditures: Fiscal Year 1992 (NSF 94-303; 25 pp., no charge), heaps of statistics, including the top 100 universities in R&D spending, from all sources—headed by Johns Hopkins (which counts funding of the Navy's Applied Physics Lab, managed by Hopkins), followed by the University of Michigan, Stanford, and the University of Wisconsin, at Madison. The figures show academic R&D outlays running a step ahead of inflation in fiscal 1992, which ended October 1, 1993, the latest for which extensive data are available—up from \$17.6 billion in FY 1991 to \$18.9 billion in '92. That's a 7 percent gain in a year when the national inflation rate stood at 3 percent; however, the research costs are considered to run higher. Industry increased its academic research support by 8 percent, but despite much talk about closer academic-industry relations, industrial funding for university-based research accounted for just \$1.3 billion of the \$18.9 billion academic R&D total. Federal agencies provided nearly 60 percent of academe's research money, with the balance coming mainly from state agencies and internal sources. The data, compiled by NSF's Division of Science Resources Studies, were released in advance of a comprehensive report due later this year.

Also from NSF: **Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1992** (NSF 94-301; 55 pp., no charge), another foretaste of a bigger publication to come, this one reports enrollments at 348 institutions, with data on fields of study, males and females, sources of support, etc.

Order from: NSF, Division of Science Resources Studies, Publications Unit, Arlington, Va. 22230; tel. 703/306-1773; fax 703/306-0510.

Advanced Technology: Proposed Review Process and Treatment of Foreign-Owned Business (GAO/RCED-94-81; 13 pp., no charge), from the General Accounting Office (GAO), a look at the award criteria and foreign eligibility for the fastest-growing item in the federal R&D portfolio, the Advanced Technology Program (ATP) of the National Institute of Standards and Technology. A Clinton favorite, ATP soared from \$68 million in FY '93 to \$200 million this year, and Clinton proposes \$451 million for next year. With ATP still in the formative stage, Congressional opinion can be important, since ATP plays an ideologically sensitive role—matchmaker and partial financier for industrial consortia assembled to work on "precompetitive generic technology." The report says, however, that the terminology has created puzzlement among applicants, and "ATP plans to use the terms 'high risk' and 'broad-based' to more precisely describe the types of projects it seeks to fund." Regarding the

eligibility of foreign-owned firms, the GAO notes that the program aims for US economic advantage, but foreign-owned firms may participate if they satisfy certain criteria, and in a recent round, two of them received awards.

Order from: USGAO, PO Box 6015, Gaithersburg, Md. 20884-6015; tel. 202/512-6000; fax 301/258-4066.

MRC News (36 pp., quarterly, no charge), from Britain's Medical Research Council, counterpart of the US National Institutes of Health, in a newly restyled slick magazine format, written in popular style, describing the agency's programs. The latest issue, focused on the MRC's new Clinical Research Initiative, includes reports on training programs and European research collaboration and lists various MRC publications.

Order from: Medical Research Council, Publications Department, 20 Park Crescent, London W1N 4AL; tel. 44 71 636-5422; fax 44 71 436 6179.

Research Reports from the Netherlands (7 pp., no charge), from the Netherlands Organization for Scientific Research (NWO), the central government agency for research, published in collaboration with research institutes, universities, and the Ministry of Education and Science, contains brief descriptions of research projects, across many disciplines, with investigators' names, addresses, phone and fax numbers. The December issue also reports on the Netherlands' International Institute for Asian Studies, jointly established last year by several universities and the Royal Netherlands Academy of Science.

Order from: Ministry of Education and Science, International Relations, PO Box 25000, 2700 LZ Zoetermeer, Netherlands; tel. 31 79 532825; fax 31 79 512 089.

General Aviation Task Force Report (58 pp., a limited supply available at no cost; a small copying charge when they're gone), commissioned by NASA chief Daniel Goldin to examine remedies for the withering of US manufacturing in general aviation, an economically booming sector defined as "all aviation except scheduled airlines and the military." Shipments of US-produced aircraft in this category dropped from nearly 18,000 in 1978 to 899 in 1992, the report states, due to "lack of funds and incentives to produce new designs in the existing atmosphere of product liability litigation." The report, however, focuses on the dearth of NASA programs relevant to general aviation, in industry, academe, and NASA's own facilities.

The report states that university-based engineering programs "have drifted further and further away from the general aviation field," and notes that "At one time, for example, there were as many as two dozen engineering school programs conducting active flight research involving general aviation aircraft. This has dwindled to but three at the present time, and one of these is largely funded from foreign sources."

Order from: NASA Headquarters, Information Center, Mail Job-24, Washington, DC 20546; tel. 202/358-0000.

(Continued on Page 7)

